

**SILVERTON AREA SOIL SAMPLING PROPOSAL**  
**Prepared by EPA Region 8**  
**July 22, 2015**

**BACKGROUND**

EPA would like to work with the Town of Silverton to conduct soil sampling in public areas such as dirt roads, parks and recreation areas. The sampling will help EPA and the Town determine: (1) if the historical mining, smelting, milling, and/or concentrating operations in or near Silverton have caused the deposition of high metal concentrations in municipal soils, and (2) if the concentrations of elevated metals poses a threat to human health or the environment.

While there is no evidence of public health impacts to Town residents, such as lead poisoning, the soils in the Town of Silverton has had limited sampling for metal contamination. We do know that towns with historical hardrock mining and smelting frequently have soils contaminated with metals such as lead, zinc, arsenic, cadmium, barium and mercury. The sampling would help EPA and the Town identify if there is a potential problem that warrants further evaluation.

**WHAT IS LEAD POISONING?**

Exposure to lead is associated with neurological deficits such as decreases in IQ, hyperactivity, and attention deficit disorder, particularly in children. The effects of lead poisoning are very subtle and would not become apparent unless the levels were dangerously high. Generally, the only way to determine if lead poisoning has occurred is with a blood test. People can be exposed to lead from a variety of sources including lead-based paint, lead solder in drinking water pipes, contaminated soils, glazed pottery, medicinal remedies (from outside the U.S.) and ammunition re-loading.

**SAMPLING DATA FROM THE ROSE/WALSH SMELTER**

In 2005, EPA conducted an assessment at the former Rose-Walsh Smelter. The assessment included surface and sub-surface sampling of the 18.8 acre site (see attached figure). The assessment found levels of lead in the surface soils varied widely: ranging from 56 ppm (parts per million) in the vegetated area (north side of property) to 34,000 ppm in the smelter area (center of property). The statistical mean concentration around the smelter area was between 903 and 3,980 ppm. This may or may not be indicative of potential contamination of soils in the Town.

**PROPOSED AREAS TO ASSESS**

We propose to collect surface samples (approximately 1-2 inches deep) in areas where there are exposed soils and/or there is potential for exposure, particularly for kids. Generally, we would focus sampling in areas: near the four historic smelters or milling areas, where smelter waste may have been used as road fill, near the residential sections of Town, and/or where kids commonly play. We propose sampling at the:

- Silverton Memorial Park (below sod) and nearby dirt roads
- Along walking trails by the creek

- Reese Street, various locations on the public right-of-way
- Blair Street, various locations on the public right-of-way
- Silverton Family Learning Center, Cement Street and on the public right-of-way
- Kendall Mountain Recreation Area
- Schools?

*Are there other public areas with the potential for exposure that the Town would like to be sampled?*

The samples would be analyzed for total recoverable metals and bio-availability. The bioavailability test will help determine if the metals are found in forms that are more easily absorbed into the blood, which poses a greater threat to public health.

We would also collect several background samples at locations to-be-determined. The background samples are critical for determining whether the in-town soil samples have metal concentrations above the average metal concentrations that would be present in undisturbed or non-impacted areas. There may be some information from the Rose-Walsh Smelter project that can be used for this purpose.

## **TIME FRAMES**

The proposed soil sampling is routine and non-invasive. We propose collecting the samples during the shoulder season (September/October 2015) so there is minimal impact or disruption. We can work with the Town to determine the best timeframe for the sampling.

## **SAMPLE RESULTS AND NEXT STEPS**

We would have initial analytical results from the sampling within a few weeks that we could share with the Town. However, it may take approximately a month to have the fully reviewed and verified laboratory results. If the sample results show significantly elevated metal contamination, EPA would work with the Town to determine the best course of action. EPA and the Town may decide to conduct additional sampling to better characterize the extent of elevated metals. If some type of action to reduce exposure is warranted, EPA would make a recommendation to the Town, work closely with the Town on how a proposed cleanup could be performed, and identify next steps.

## **WHAT WOULD BE SIGNIFICANT?**

Exposed soil with lead levels above 3,000 ppm found on Town property within residential areas may warrant further action (e.g. capping or removal of contaminated soils to a reasonable depth to avoid being easily disturbed by normal road maintenance, etc). Levels between 400 ppm and 3,000 ppm would warrant further evaluation, which EPA can review with the Town representatives. There are a number of actions that could be considered. EPA would work closely with the Town to determine the most effective next steps.

## CONCLUSION

This proposed investigation would provide an indication as to whether the conditions exist for potential exposure to heavy metals that pose a significant threat to the community of Silverton, especially the younger population. If the results indicate that areas have elevated lead and/or arsenic that may pose a threat, then additional investigation is likely necessary to provide the data needed to make recommendations for any action to reduce that potential exposure.

This phased approach to sampling described above is not adequate to determine if individual residential properties may have high concentrations of metals in soils. However, this phased approach to sampling may provide an indication as to whether it is a condition that likely exists. For example, the random placement of mine waste by individuals over time is more difficult to assess without a widespread comprehensive sampling program than is evaluating deposition from historic industrial operations or flooding events.

The proposed approach described above is a reasonable method for providing the Town and the community with information to judge what next steps are appropriate, and it will allow EPA to make recommendations based on more comprehensive data than what is currently available.

## CONTACTS

Please don't hesitate to call us if you have questions about the proposal or would like additional information.

Steve Way, EPA On-Scene Coordinator  
303-312-6723 (w) or 303-886-1640 (c) [way.steven@epa.gov](mailto:way.steven@epa.gov)

Joyel Dhieux, EPA On-Scene Coordinator  
303-312-6647 or [dhieux.joyel@epa.gov](mailto:dhieux.joyel@epa.gov)